

A new species of *Anusoidea* Girault, 1926 (Hymenoptera: Encyrtidae) from the Philippines parasitizing *Pseudococcus citriculus* Green (Homoptera: Pseudococcidae)

by

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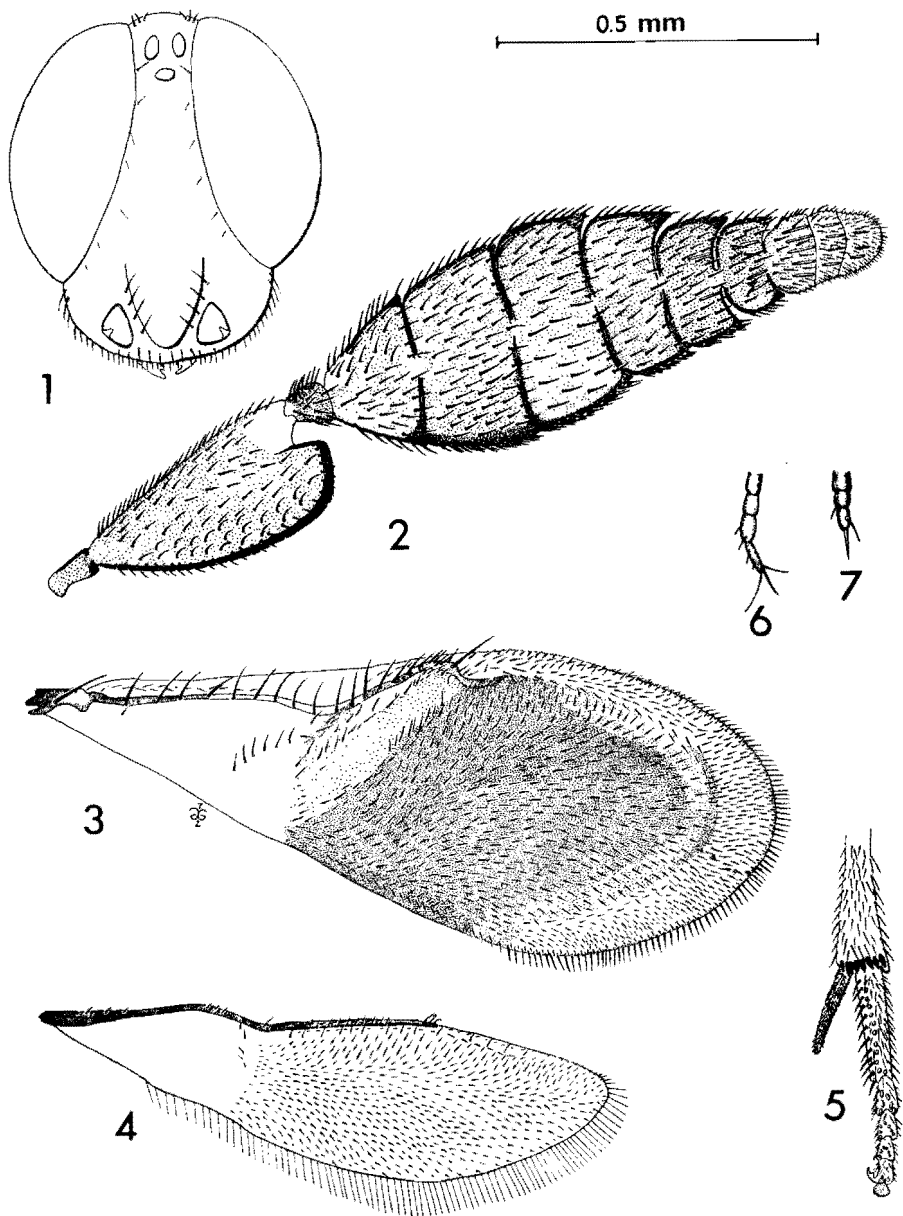
Anusoidea luzonica spec. nov. is described and *Pseudococcus citriculus* Green indicated as host. Distribution and host spectrum of *Anusoidea* are briefly discussed.

Material submitted for identification to Professor Paul DeBach's IBP Project on biological control of scale insects, University of California, Riverside, by Sr C. S. Celino, Bureau of Plant Industry, Lipa Experiment Station, Luzon, revealed the presence of a new species of *Anusoidea* attacking *Pseudococcus citriculus* in the Philippines. Discovery of *A. luzonica* spec. nov. represents the first record of this genus in the Philippines and the third time *Pseudococcus* has been identified as a host.

Anusoidea luzonica spec. nov., figs 1–7

FEMALE. Length 2.4 mm. Head orange with ocelli bright red; compound eyes dark; mesosoma tan with mesoscutum faintly dusky; sclerotized area beneath tegula (= scapula), axillary sclerite dark brown; prosternal furca, mesosternal discrimen and furca dark brown; metasoma uniformly dusky. All legs straw coloured except dusky proximolateral region of fore coxae, and mesal contiguous margins of middle coxae. Antennal scape dusky with ventral margin considerably darker, apex nearly white; pedicel basally white, mesally dusky, distally lighter; funicular segments dusky with dorsal, ventral, and intersegmental margins darker; dorsum of basal portion of first funicular segment white; club slightly lighter than funicular segments. Forewing costal cell, basal third and proximal wing margin hyaline, remainder of blade infuscated, but lighter beneath distal portion of submarginal vein and a crescent-shaped streak distally; hindwing hyaline.

Head (fig. 1) subprognathous, in dorsal aspect 3 times wider than median length; vertex with short bristles at inner margin of each compound eye and a line of setae extending ventrally along inner eye margin; frontovertex at narrowest less than one-fifth head width, less than one-sixth head height. Ocelli anterior to vertex, anterior ocellus slightly more than diameter of ocellus from inner eye margin, lateral ocellus considerably less than ocellar diameter from inner eye margin. Frontal aspect of head slightly longer than wide; entire frontal surface bearing lightly incised, uniform, reticulate sculpture; compound eye strongly protuberant, bearing a few minute setae, nearly asetose; height over twice length of malar space; malar space setose; toruli large,



Figs 1-7. *Anusoidea luzonica* spec. nov., female. 1. Head, anterior aspect. 2. Left antenna, inner aspect. 3. Right fore wing. 4. Right hind wing. 5. Right mesothoracic tibio-tarsal complex, posterior aspect. 6. Right maxillary palpus. 7. Right labial palpus, outer aspect.

triangular, situated at ventral margin of head, separated by a large, "V" shaped carina; lateral carinal margins acute, area between carina and torulus with a line of large setae; scrobe absent. Antenna 11-segmented (fig. 2), laterally compressed, foliate, all segments with uniform vestiture of short setae; funicular segments expanding distally with apex of 3rd funicular segment widest, subsequent segments progressively narrower; flagellar segments 4-6 bearing indistinct longitudinal sensilla along apical margin; club 3-segmented, compact, bearing numerous longitudinal sensilla. Maxillary palpus 4-segmented (fig. 6), segments 1-3 subequal, apical segment longer, thinner; labial palpus 3-segmented (fig. 7), segment 2 shortest, apical segment bearing large spine. Mandible bidentate, tooth margin sharply incised and outer mandibular surface moderately setose.

Mesosoma slightly longer than wide; pronotum dorsally rugose with a few small setae, laterally shagreened with numerous large setae; mesoscutum rugose, with uniform vestiture of short dark setae, setae along scutoscuteellar suture considerably larger. Axillae broadly joined mesally; axillae, mesoscutellum rugose, setose; setae along posterior margin of mesoscutellum twice longer than axillary setae; tegula large, rugose, with a few dark setae; mesonotum striatolate, asetose; propodeum lightly shagreened, laterally with small pale setae. Tibial spur of mesothoracic leg (fig. 5) two-thirds as long as middle basitarsus; basitarsus longer than remaining tarsomeres combined. Forewing (fig. 3) 2.5 times longer than wide, speculate; costal cell large, with a line of 14-18 pale, fine setae originating near wing base and extending one-half distance to marginal vein; second costal cell setal line at apex of cell, consisting of 4-6 setae. Submarginal vein with 15-18 minute bullae along posterior margin, with 8-10 large setae extending from base to bend, and 6-7 large setae on anteriorly directed portion of vein; marginal vein short, densely covered with setae; postmarginal vein absent. Speculum rather wide, surrounded by setae; delta area of forewing with a single oblique line of 6-9 setae projecting rearward from bend of submarginal vein; marginal fringe maximally one-tenth as long as forewing blade width.

Metasoma subequal in size to mesosoma; paratergites elongate, well developed; tergite I lightly shagreened, with a few pale, short setae; terga II-IV shagreened mesally, with irregularly distributed long setae; lateral portion of gastral tergite IV not sculptured, bearing a line of relatively large setae posterior to spiracle extending to apex and adjacent to paratergite; tergite VIII glabrous except lightly shagreened lateral margins, with minute denticles and setae. Cercal plate with 3 long and 1 short setae. Sternite I shagreened, with 2 widely separated, parallel, mesal, longitudinal rows of setae; sternite II densely setose, lateral setae small, mesal setae considerably larger, less dense; remaining sternites nearly smooth with irregular scattered vestiture of minute setae. Ovipositor short, not projecting beyond apex of gaster, as long as middle basitarsus and tarsomeres 2-3 combined; ovipositor sheath short, thickset, with 3-5 long setae on apex.

MALE. Unknown.

Comparative Comments. Despite Girault's (1926) vague description of *Anusoidea*, the genus represents one of the most distinctive of all anagryne encyrtids. Females of *A. luzonica* differ from the type-species, *A. aureiscutellum* Girault, in that the latter's scape is much shorter and more expanded, the flagellar segments are nearly all the same height with the club indistinctly differentiated from the funicle, the forewing exhibits

a bare crescent-shaped region beyond the stigma, and the mesosoma and legs are predominantly mauvish.

Anusoidea luzonica differs from *A. comperei* Timberlake in that females of the latter species have 2-segmented maxillary and labial palpi, the face bears shallow punctations, and the antenna and entire mesosoma except axilla are dark. Girault (1927) described *A. varia*, but I have been unable to obtain specimens for comparison. However, the original description indicates predominantly purple legs, presence of a postmarginal vein, and elongate stigma. These characters are sufficient to distinguish *A. varia* from *A. luzonica*. Tachikawa (1968) described *A. phoonae* on the basis of a female reared at Singapore from *Pseudococcus* sp. on an orchid. *Anusoidea luzonica* may be distinguished from that species on the basis of scape coloration being whitish, forewing infuscation extending only to the stigma with no light band, and a depressed scutellum. The habitus of the Philippine species compares in every other respect with other members of *Anusoidea*.

Anusoidea aureiscutellum, *A. varia*, and *A. comperei* are Australian species and have not been recovered elsewhere. The discovery of *A. phoonae* at Singapore and the presence of *A. luzonica* in the Philippines suggests a wider distribution of the genus than believed earlier.

Girault did not indicate the hosts of his species, but Mr Harold Compere recovered the holotype of *A. comperei* from undetermined mealybugs and reared additional specimens from *Pseudococcus calceolariae* (Maskell). Tachikawa (1963) has indicated that *Anusoidea* is parasitic on Pseudococcidae and recovery of *A. luzonica* from *P. citriculus* supports that writer's findings.

MATERIAL EXAMINED: Four ♀♀ as follows: *Holotype*: ♀ mounted in Canada balsam with label inscribed "*A. luzonica*, Lipa City, Luzon, Phillipines. August, 1971. Host: *Pseudococcus citriculus* Green. Leg. C. S. Celino." *Paratypes*: 1 ♀ mounted in Canada balsam and 2 ♀♀ mounted in Hoyer's medium with similar label inscriptions. All material is deposited in the Biological Control Museum, University of California, Riverside, California.

ACKNOWLEDGEMENTS

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